



# West Nile Virus Information for Outdoor Workers

West Nile Virus (WNV) is a mosquito-borne infection that can cause encephalitis. The virus was first seen in the Americas in New York State in 1999 and was first identified in Michigan in 2001. Even though the chances of a person getting encephalitis are small, the Michigan Department of Community Health (MDCH) wants Michigan residents, especially those who work outdoors, to be informed and prepared to take preventive measures to avoid WNV. The best way to do this is to avoid the mosquitoes that spread the virus.

This fact sheet outlines some simple steps you can take to reduce your risk of being bitten by mosquitoes. These precautions are designed to protect both the general public and people who work outdoors.

## Do I need to change my safety practices when working outdoors?

Most mosquitoes are not infected. The chance that any one bite will be from an infected mosquito is very small. You can further reduce your risk of disease by reducing mosquito bites. Precautions that you can follow to help reduce the risk of mosquito bites include:

- Reduce mosquito-breeding areas by making sure that wheelbarrows, buckets, and other containers are turned upside down when not being used so that they do not collect standing water.
- Wear shoes, long pants with bottoms tucked into boots or socks, and a long-sleeved shirt when outdoors for long periods of time, or when mosquitoes are most active (between dusk and dawn).
- Use mosquito repellent according to label directions when outdoors for long periods of time and when mosquitoes are most active.

Insect repellents can be effective at reducing bites from ticks and insects that can transmit disease. But their use is not without risk of health effects, especially if repellents are applied in large amounts or improperly. Most repellent products contain the active ingredients permethrin or DEET. Permethrin-containing products can be used **only on clothing**, not skin. Permethrin kills ticks and insects that come in contact with treated clothes. Permethrin repellents can cause eye irritation, particularly if label directions have not been followed. Animal studies indicate that permethrin may have some cancer-causing potential. DEET products have occasionally been associated with skin reactions (particularly at concentrations of 50 percent and above) and eye irritation. Under demanding conditions, a two-part approach has been used to protect people from ticks and other biting insects. The approach uses a repellent product containing about 33 percent DEET in a controlled-release formulation on exposed skin along with clothing treated with permethrin. This may meet the needs of individuals spending long periods of time in areas with high populations of active mosquitoes.

MDCH recommends the following precautions when using insect repellents:

- Use only what and how much you need for your situation; depending on your job, you may need more or less protection.
- Do **NOT** apply insect repellents in enclosed areas.
- Wash treated clothing separately and wash all treated skin after returning indoors.
- When using DEET, put it on your hands first, and then apply to your face.
- DEET can be applied to clothing, but it may damage some synthetic fabrics and plastics.
- Permethrin-treated clothing is effective for two weeks or more; keep treated clothing in a plastic bag when not in use.

MDCH is keeping track of the number of Michigan residents who experience an adverse health effect due to a pesticide application to control for West Nile mosquitoes in 2003. You can report incidents to the **1-800-MI-TOXIC** hotline. You are not required to give your name. If you were working at the time, we will ask you additional questions related to your work.

## How can I avoid heat stress on hot, humid days?

If you wear a long-sleeved shirt, long pants, shoes, and socks to reduce the risk of mosquito bites, you might be at greater risk for heat stress on hot, humid days. To avoid symptoms of heat stress, you should:

- Wear light-colored, breathable clothing that allows moisture to evaporate quickly.
- Use extra caution if you are required to wear clothing on the job that limits evaporation – you could develop heat stress much more quickly.
- Drink plenty of non-alcoholic and non-caffeinated liquids to maintain body hydration.

## What can I do to reduce my exposure to pesticide sprays?

As with any pesticide, you should avoid unnecessary exposure. Some precautions that you can take to minimize pesticide exposure, if spraying occurs, include:

- If possible, remain inside or avoid the area whenever spraying occurs.
- If you get sprayed directly:
  - Protect your eyes. If you get pesticide spray in your eyes, rinse them immediately with water.
  - Wash clothing separately from other clothing.
  - Wash exposed skin surfaces with soap and water.



## What steps are taken to ensure proper application of pesticides?

All personnel who do pesticide applications for mosquito abatement for hire must be certified or registered in mosquito pest management and the Michigan Department of Agriculture (MDA) must license the business. MDA is the lead state agency responsible for regulating the use of pesticides in Michigan. Please contact your regional MDA office or visit the link below for more information about commercial business licensing or application certification requirements.

MDA web page on pesticide application business and certification requirements  
[http://www.michigan.gov/mda/0,1607,7-125-1569\\_16988---,00.html](http://www.michigan.gov/mda/0,1607,7-125-1569_16988---,00.html)

DEQ has regulatory jurisdiction over mosquito control projects where pesticides are applied to surface waters and storm water catch basins. A 'Notification of Coverage' form must be completed prior to pesticide application to any surface water.

For more information and forms  
[http://www.michigan.gov/deq/0,1607,7-135-3313\\_24554---,00.html](http://www.michigan.gov/deq/0,1607,7-135-3313_24554---,00.html)

## Can I get West Nile Virus from handling dead animals?

There is no evidence that West Nile Virus can be spread directly from animals to people. However, gloves should be worn whenever dead animals must be handled.

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**If you have a poisoning emergency, call 1-800-222-1222**

Michigan West Nile Virus Hotline: 1-800-668-0869  
**[www.michigan.gov/wnv](http://www.michigan.gov/wnv)**